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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/617,272	07/17/00	KATO	K 106774

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EXAMINER	
MULLINS, B	
ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/617,272	Kato
Examiner	**Art Unit**
Burton S. Mullins	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-3 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-3 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

BURTON S. MULLINS
PRIMARY EXAMINER

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claim 1 is objected to because of the following informalities: Change "provided to the rotor" to --provided on the rotor--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 2-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recitations "formed in connection with the rotor" is indefinite. Does this mean the outer or inner race is formed on the rotor?

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 5336955) in view of Moritan et al. (US 5,715,116). Suzuki '955 teaches a disk-drive motor comprising: a rotor 6 with a permanent magnet 5 facing an armature 3; a bearing 8 supporting the rotor located radially inward of the magnet 5 and armature 3; a fitting portion on the rotor comprising a drive pin 12 (Fig.4) inserted into a reference hole (not numbered) of a magnetic disk 11 to support the disk during operation (c.5, lines 9-18); wherein the magnet is disposed radially outward of the fitting portion (see Fig.2).

Suzuki '955 teaches roller bearings, not fluid bearings, per se.

Moritan teaches a dynamic pressure fluid bearing comprising a rotor shaft 12 with herring-bone grooves thereon in combination with a sleeve 21 (Figs.1a-1b) fit into the inner wall of hollow cylinder 23a forming part of the stator (c.7, lines 47-53). This type of bearing is well known for its small volume, quiet operation and low vibration (c.1, lines 40-52).

It would have been obvious to modify the roller bearings of Suzuki and provide a fluid bearing per Moritan because such a bearing would have been desirable for its small volume, quiet operation and low vibration.

Regarding claim 2, the sleeve structure of Moritan is such that the inner "race" formed by herringbone pattern 12a is part of the rotor.

6. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 5336955) in view of Suzuki et al. (US 5,793,135). Suzuki '955 teaches a disk-drive motor comprising: a rotor 6 with a permanent magnet 5 facing an armature 3; a bearing 8 supporting the rotor located radially inward of the magnet 5 and armature 3; a fitting portion on

the rotor comprising a drive pin 12 (Fig.4) inserted into a reference hole (not numbered) of a magnetic disk 11 to support the disk during operation (c.5, lines 9-18); wherein the magnet is disposed radially outward of the fitting portion (see Fig.2).

Suzuki '955 teaches roller bearings, not fluid bearings, per se.

Suzuki et al. (US 5,793,135) teaches a fluid sleeve bearing for a disk drive motor comprising a support shaft 25, rotor shaft 28 and two journal regions 29 and 30 therebetween. Spiral grooves may be formed on the support shaft to reduce friction. The sleeve bearing maintains the same advantages of ball bearings while reducing production costs (c.2, lines 1-7).

It would have been obvious to modify the roller bearings of Suzuki '955 and provide a fluid sleeve bearing per Suzuki '135 because this would have been desirable to reduce production costs while retaining the advantages of traditional roller bearings.

Regarding claim 3, the sleeve structure of Suzuki '135 is such that the outer "race" of the bearing is part of the rotor.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is (703) 305-7063.

bsm

May 17, 2001

BURTON S. MULLINS
PRIMARY EXAMINER